undemarcated except by nature) with Afghanistan? It is defined by the main water parting of the Hindu Kush. Which is to be the main water parting?

One more small criticism must be permitted ere we close a sketchy notice of a work so valuable as to require serious and well-considered analysis. The use of a publication of this sort to the ordinary traveller is largely limited by its portability. In its present form it would hardly serve the purpose of the mountaineer, who must before all things consider size, weight, and general handiness; and yet it is specially written for the mountaineer. Most of the illustrations (which probably govern the size of the issue) could be reduced to one-quarter their present size, and the rest could be folded in a separate pocket. It is much to be hoped that this treatise will have a wide circulation, but there is too much of the regular official "Survey of India" type of publication about it for general use in its present form. T. H. H.

ANNIVERSARY MEETING OF THE ROYAL SOCIETY.

THE anniversary meeting of the Roval Society was held as usual on St. Andrew's Day, November 30, at Burlington House. The report of the council was presented, in which reference was made to the chief subjects to which attention had been given during the year. As Lord Rayleigh expressed the desire to resign the presidency, the council submitted the name of Sir Archibald Geikie, K.C.B., for election into the office of president. To fill the vacancy thus created it was proposed to transfer the foreign secretary, Prof. J. R. Bradford, into the office of principal secretary, and to elect Sir William Crookes as foreign secretary. The officers, and also the other members of the council whose names were given in NATURE of November 5 (p. 15), were elected at the annual meeting. Among other matters mentioned in the report of the council of the Society we notice the following :—

Two volumes have been issued descriptive of the physical work of the National Antarctic Expedition. During the expedition a large number of photographs were taken of the scenery and physical features, partly also of the biology of the regions visited, while Mr. E. A. Wilson made many careful drawings of the various coast-lines that were passed. Although certain of these photographs have already been reproduced in some of the reports and other works descriptive of the expedition, it was decided to publish an ample and thoroughly illustrative series of both the photographs and the sketches, accompanied with maps which should show the precise position of each spot from which a panoramic photograph or sketch had been taken. Future explorers will thus be helped to note any changes which may affect the snow-fields, glaciers, ice-barriers, or other features, while the general public will be put in possession of a remarkably striking series of views of Antarctic scenery and life. Accordingly, an Antarctic album and portfolio have been prepared by Mr. Wilson under the supervision of the committee, and are now nearly ready for publication.

Within the last few weeks Dr. Mond has directed the attention of the officers of the society to the desirability of further acceleration of the catalogue of scientific papers. As the result of conferences with the officers and the director of the catalogue, he has undertaken to increase his previous generous subventions by a sum of 2000*l.* on condition that the society fall in with his suggestion that additional expert assistance be employed to deal with the arrangement of the material for the subject indexes, and an effort be thus made to finish the index volumes for mechanics, physics, and chemistry within two or three years.

In April a letter was received from the Home Office on the subject of the disease known as glass-workers' cataract, inquiring whether elucidation of the cause of the disease and its remedy, in the light of the physical and physiological problems involved, could be made the subject of an inquiry by a committee of the Royal Society. After full consideration the council appointed a committee to inquire into and report on this subject.

Changes have been made in the regulations as to grants for scientific investigations. In order that applicants may be informed earlier in the year of the decisions of the Government Grant Committee with regard to grants, the regulations now provide that applications shall be received not later than January 1, and it is therefore hoped that it may be possible for the general committee to meet at some time before the end of March instead of in May.

In 1870 the society placed in the hands of Sir William Huggins, on loan, an equatorial mounting and twin telescopes, purchased by means of the Oliveira bequest, which was to be expended on a telescope. As was announced in last week's NATURE (p. 114), Sir William Huggins is unable now to make such use of the instruments as would justify him in retaining them. A new home for the instruments has been found, therefore, at the University of Cambridge.

At the end of last year a letter was received from the Colonial Office asking the society to advise in detail as to means for carrying out the further researches recommended by the tropical diseases committee, as specified in the last report to the council. At the invitation of the committee Colonel Sir David Bruce has undertaken the supervision of further investigations in Uganda, and sailed in September last.

The scheme for the establishment of an International Central Bureau in connection with sleeping sickness, referred to in the last report, having fallen through, H.M. Government decided to establish a National Bureau in London, to be administered on similar lines, the cost being defrayed from Imperial funds, including a contribution from the Sudan. The bureau was definitely established in June last, one of the society's rooms being placed at its disposal at the request of the Colonial Office.

In his presidential address Lord Rayleigh referred to the heavy losses by death sustained by the Society among its fellows and foreign members. Particular reference was made to Lord Kelvin, Sir Richard Strachey, Dr. Sorby, and Sir John Evans as having passed away since the last anniversary meeting. These and other main subjects of the address are here summarised :—

We are fortunate in having secured for our Proceedings a review of Kelvin's life and work, written by one who is especially well qualified for the difficult task. I do not doubt that Prof. Larmor is right in placing in the forefront of that work those fundamental advances in thermodynamics which date from the middle of the last century. It was Kelvin who first grasped the full scope of the principle known as the second law, a law which may indeed well be considered to stand first in order of importance, regarded from the point of view of man's needs and opportunities.

My acquaintance with Kelvin was limited, until about 1880, a time when I was occupied with measurements relating to the electrical units, and received much appreciated encouragement. From then onwards until his death I enjoyed the privilege of intimacy and, needless to say, profited continually from his conversation, as I had done before from his writings.

Dr. Sorby belonged to a class on whom England has special reason to congratulate herself, men who pursue science unprofessionally. The names of Cavendish, Young, Joule, and Darwin at once suggest themselves. It is to be feared that specialisation and the increasing cost and complication of experimental appliances are having a prejudicial effect in this regard. On the other hand, the amateur is not without advantages which compensate to some extent. Certainly, no one who has the root of the matter in him should be deterred by fears of such difficulties, and the example of Sorby suffices to show how much is open to ingenuity unaided by elaborate appliances.

On the foreign list also the losses are heavy. We have especially to condole with our colleagues in France upon the havoc caused by death within the last year or two. Janssen and Mascart, who was much missed at the recent

Electrical Conference, had reached a full age; but Becquerel was in the full tide of life, and we had hoped to learn much more from him. As the discoverer of radio-activity, he had opened up inquiries the significance of which seems ever on the increase. Science has lost a leader; his friends and the world a charming personality.

During the time that I was secretary, and so concerned with the passing of mathematical papers through the press, I was much struck with the carelessness of authors in the arrangement of their manuscript. It is frequently forgotten that a line of print in the Transactions and in the new form of the Proceedings will hold much more than a line of ordinary manuscript, unless, indeed, the handwriting is exceptionally small. Unless the authors' indications were supplemented, it frequently occurred that several lines of print were occupied by what might equally well, and in my judgment much better, be contained in one line. Even practised writers would do well, when they regard their manuscript as complete so far as regards matter and phrasing, to go over it again entirely from the point of view of the printing. In this way much expense and space would be spared, and the appearance of the printed page improved.

Apart from questions of printing, the choice of symbols for representing mathematical and physical quantities is of some importance, and is embarrassed by varying usages, especially in different countries. A committee now sitting is concerned with the selection of symbols for electrical and magnetic quantities, but the question is really much wider. One hesitates to suggest another international conference, and perhaps something could be done by discussion in scientific newspapers. Obviously some give and take would be necessary. When the arguments from convenience are about balanced, appeal might be made to the authority of distinguished men, especially of those who were pioneers in the definition and use of the quantity to be represented. As an example of the difficulties to be faced, I may instance the important case of a symbol for refractive index. In English writings the symbol is usually μ, and on the Continent n. By the early optical writers it would seem that no particular symbol was appropriated. in 1815 (Phil. Trans., 1815) Brewster has m. The earliest use of μ that I have come across is by Sir John Herschel (Phil. Trans., 1821, p. 230), and the same symbol was used by Coddington (1829) and by Hamilton (1830), both distinguished workers in optics. On the other hand, n was employed by Fraunhofer (1815), and his authority must be reckoned very high. As regards convenience, I should suppose that the balance of advantage would incline to μ, since n is wanted so frequently in other senses. Another case in which there may be difficulties in obtaining a much-to-be-desired uniformity is the symbol for electrical resistance.

On a former occasion I indulged in comment upon the tendency of some recent mathematics, which were doubtless understood as the mild grumbling of an elderly man who does not like to see himself left too far behind. In the same spirit I am inclined to complain of what seem unnecessary changes in mathematical nomenclature. In my youth, by a natural extension of a long-established usage relative to equations, we spoke of the *roots* of a function, meaning thereby those values of the argument which cause the *function* to vanish. In many modern writings I read of the *zeroes* of a function in the same sense. There may be reasons for this change; but the new expression seems to need precaution in its use, otherwise we are led to such flowers of speech as "zeroes with real part positive," which I recently came across (Proc. Math. Soc., vol. xxxi., p. 266). But though I may use a little my privilege of grumbling over details, I hope I shall not be misunderstood as undervaluing the progress made in recent years, which, indeed, seems to me to be very remarkable and satisfactory, regarded from the scientific point of view. On the other hand, I cannot help feeling misgivings as to the suitability of the highly specialised mathematics of the present day for a general intellectual training, and I hope that a careful watch may be maintained to check, in good time, any evil tendencies that may become apparent.

Among the notable advances of the present year is the liquefaction of helium by Prof. Onnes, of Leyden. It is but a few years since Sir J. Dewar opened up a new field of temperature by his liquefaction of hydrogen, and now a further extension is made which, if reckoned merely in difference of temperature, may appear inconsiderable, but seen from the proper thermodynamical standpoint is recognised to be far-reaching. The exploration of this new field can hardly fail to afford valuable guidance for our ideas concerning the general properties and constitution of matter. Prof. Onnes's success is the reward of labours well directed and protracted over many years.

The discovery and application by Rutherford and Geiger of an electrical method of counting the number of α particles from radio-active substances constitutes an important step, and one that appears to afford better determinations than hitherto of various fundamental quantities. It would be of interest to learn what interpretation is put upon these results by those who still desire to regard matter as homogeneous.

Another very interesting observation published during the year is that of Hale upon the Zeeman effect in sun-spots, tending to show that the spots are fields of intense magnetic force. Anything which promises a clue as to the nature of these mysterious peculiarities of the solar surface is especially welcome. Until we understand better than we do these solar processes, on which our very existence depends, we may do well to cultivate a humbler frame of mind than that indulged in by some of our colleagues.

A theoretical question of importance is raised by the observations of Nordmann and Tikhoff showing a small chromatic displacement of the phase of minimum brightness in the case of certain variable stars. The absence of such an effect has been hitherto the principal argument on the experimental side for assuming a velocity of propagation in vacuum independent of frequency or wave-length. The tendency of the observations would be to suggest a dispersion in the same direction as in ordinary matter, but of almost infinitesimal amount, in view of the immense distances over which the propagation takes place. Lebedew has pointed out that this conclusion may be evaded by assuming an asymmetry involving colour in the process by which the variability is brought about, and he remarks that although the dispersions indicated by Nordmann and Tikhoff are in the same direction, the amounts calculated from the best available values of the parallaxes differ in the ratio of 30 to 1. In view of this discrepancy and of the extreme minuteness of the dispersion that would be indicated, the probabilities seem at the moment to lie on the side of Lebedew's explanation; doubtless further facts will be available in the near future.

I cannot abstain from including in the achievements of the year the remarkable successes in *mechanical flight* attained by the brothers Wright, although the interest is rather social and practical than purely scientific. For many years, in fact ever since I became acquainted with the work of Penaud and Wenham, I have leaned to the opinion that flight was possible as a *feat*. This question is now settled, and the tendency may perhaps be to jump too quickly to the conclusion that what can be done as a feat will soon be possible for the purposes of daily life. But there is a very large gap to be bridged over; and the argument urged by Prof. Newcomb, and based on the principle of dynamical similarity, that the difficulties must increase with the scale of the machines, goes far to preclude the idea that regular ocean service will be conducted by flying machines rather than by ships; but, as the history of science and invention abundantly proves, it is rash to set limits. For special purposes, such as exploration, we may expect to see flying machines in use before many years have passed.

The report of the National Physical Laboratory for the year again indicates remarkable growth. The various new buildings, which have been erected and equipped during recent years at a cost of about 33,000*l*., are now occupied, and the result is that both researches and test work can be carried out with much greater ease and efficiency than previously. The buildings of the magnetic observatory at Eskdalemuir are now occupied, but, unfortunately, difficulty has arisen in making the magnetograph rooms, which are underground, completely water-tight, and the recording apparatus is not yet properly installed.

The progress of the "Royal Society Catalogue of Scien-

tific Papers" has advanced a definite stage during the year through the publication, by the Cambridge University Press, of the index volume of pure mathematics for the nineteenth century. Owing to the magnitude of the material to be indexed in the several sciences, it has been necessary to adopt drastic measures of compression, and the 40,000 entries involved in the present section have thus been condensed into one royal octavo volume of some 700 pages.

Through the kindness of Dr. Schuster I had the opportunity of submitting to the council, before the expiry of my term of office, a generous proposal which he makes for instituting a fund of 1500*l*., the interest of which is to be applied to pay the travelling expenses of delegates of the society to the International Association of Academies. Dr. Schuster felt that the absence of such a provision laid a burden upon delegates, and might operate to limit the choice of the society. I was empowered by the council to convey their cordial thanks to Dr. Schuster, and I have now the pleasure of making his benefaction known to the society at large.

MEDALLISTS, 1908.

COPLEY MEDAL.

The Copley medal is awarded to Dr. Alfred Russel Wallace, F.R.S.

It is now sixty years since this distinguished naturalist began his scientific career. During this long period he has been unceasingly active in the prosecution of natural-history studies. So far back as 1848 he accompanied the late Henry Walter Bates to the region of the Amazon, and remained four years there, greatly enriching zoology and botany, and laying at the same time the basis of that wide range of biological acquirement by which all his writings have been characterised. From South America he passed to the Malay Archipelago, and spent there some eight fruitful years. It was during his stay in that region that he matured those broad views regarding the geographical distribution of plants and animals which on his return to this country he was able to elaborate in his well-known classic volumes on that subject. It was there, too, amid the problems presented by the infinite variety of tropical life, that he independently conceived the idea of the theory of the origin of species by natural selection which Charles Darwin had already been working out for years before. His claims to the admiration of all men of science were recognised by the Royal Society forty years ago, when, in 1868, a Royal medal was awarded to him. Again, when in 1890 the Darwin medal was founded, he was chosen as its first recipient.

RUMFORD MEDAL.

The Rumford medal is awarded to Prof. Hendrik Antoon Lorentz, For.Mem.R.S.

Prof. Hendrik Antoon Lorentz, of Leyden, has been distinguished during the last quarter of a century by his fundamental investigations in the principles of the theory of radiation, especially in its electric aspect. His earliest memoirs were concerned with the molecular equivalents which obtain in the refractive (and dispersive) powers of different substances; in them he arrived at formulæ that still remain the accepted mode of theoretical formulation of these phenomena. The main result, that

$$(\mu^2-1)/(\mu^2+2)$$

is proportional jointly to the density of distribution of the molecules, and to a function of the molecular free periods and the period of the radiation in question, rests essentially only on the idea of propagation in some type of elastic medium; and thus it was reached simultaneously, along different special lines, by H. A. Lorentz originally from Helmholtz's form of Maxwell's electric theory, and by L. Lorenz, of Copenhagen, from a general idea of propagation after the manner of elastic solids.

The other advance in physical science with which Prof. Lorentz's name is most closely associated is one of greater precision, the molecular development of Maxwell's theory of electrodynamics.

ROYAL MEDALS.

A Royal medal is awarded to Prof. John Milne, F.R.S., for his work on seismology. In 1875 Dr. Milne accepted the position of professor at Tokyo, which was offered to him by the Imperial Government of Japan. His attention was almost immediately attracted to the study of earthquakes, and he was led to design new forms of construction for buildings and engineering structures with the view of resisting the destructive effects of shocks. His suggestions have been largely adopted, and his designs have been very successful for the end in view. Incidentally, he studied the vibrations of locomotives, and showed how to obtain a more exact balancing of the moving parts, and thus to secure smoother running and a saving of fuel. Here again his suggestions were accepted, and his work was recognised by the Institution of Civil Engineers.

He next devoted himself to the study of artificial shocks produced by the explosion of dynamite in borings. He then studied actual shocks as observed at nine stations connected by telegraph wires. A seismic study of Tokyo, and subsequently of the whole of northern Japan, followed. In this latter work he relied on reports from fifty stations. The Government then took up the matter, increased his fifty stations to nearly 1000, and founded a chair of seismology for Mr. Milne. On his return to England in 1895 he succeeded in obtaining international cooperation, and reports are now received by him from some 200 stations furnished with trustworthy instruments, and scattered all over the world.

The work of Dr. Henry Head, on which is founded the award of the other Royal medal, forms a connected series of researches on the nervous system (made partly in conjunction with Campbell, Rivers, Sherren, and Thompson), published for the most part in *Brain* at various times since 1893 up to the present date, and constituting one of the most original and important contributions to neurological science of recent times.

His first paper ("Disturbances of Sensation with Special Reference to the Pain of Visceral Disease," 1893), founded on minute and laborious clinical investigation, established in a more precise manner than had hitherto been done the relations between the somatic and visceral systems of nerves. He confirmed from the clinical side the experimental researches of Sherrington on the distribution of the posterior roots of the spinal nerves.

DAVY MEDAL.

The Davy medal is awarded to Prof. William Augustus Tilden, F.R.S.

The researches of Prof. Tilden extend into many domains. His recent work on the specific heats of the elements in relation to their atomic weights, described to the society in the Bakerian lecture for 1900, and in two later papers published also in the Philosophical Transactions, is of high theoretical importance. The employment of liquid oxygen as an ordinary laboratory reagent, rendered possible by the researches of Dewar and others, has enabled Prof. Tilden to test the validity of Dulong and Petit's law and of Neumann's law over a much wider range of temperature than was possible before, and to give a truer estimate of the range of their validity.

In the region of organic chemistry he has carried out important researches on the terpenes, such as that on the hydrocarbons from *Pinus sylvestris*, on terpin and terpinol, and on limettin. In inorganic chemistry, his investigations on *aqua regia* and on nitrosyl chloride are especially noteworthy.

DARWIN MEDAL.

The Darwin medal is awarded to Prof. August Weismann for his contributions to the study of evolution. He was one of the early supporters of the doctrine of evolution by means of natural selection, and wrote in support of the Darwinian theory in 1868. His great series of publications from that date onward must always remain a monument of patient inquiry. In forming an estimate of his work, it does not seem essential that we should decide on the admissibility of his germ-plasm theory. It is in like manner unimportant that he was, in certain respects, forestalled by Galton, and that his own views have undergone changes. The fact remains that he has

done more than any other man to focus scientific attention on the mechanism of inheritance.

HUGHES MEDAL.

The Hughes medal is awarded to Prof. Eugen Goldstein.

Prof. Goldstein was one of the early workers on the modern detailed investigation of the electric discharge in rarefied gases, and by long-continued researches has contributed substantially to the systematic analysis of the complex actions presenting themselves in that field. Of these researches may be mentioned his observations of the effect of magnetic force on striations, of the phosphorescence produced by the kathode rays, and of the reflection of kathode rays.

By his discovery of the so-called Kanalstrahlen, or positive rays, he has detected an essential feature of the phenomenon, which, in his own hands and in those of other workers, has already thrown much needed light on the atomic transformations that are involved.

THE PAST AND PRESENT OF THE ROYAL SOCIETY.

At the anniversary dinner, held at the Hôtel Métropole on Monday evening, Sir Archibald Geikie presided, and a distinguished company of fellows and their guests assembled together.

Prof. Lorentz, in proposing the toast of "The Royal Society," said he availed himself of the opportunity for saying a few words about the Royal Society, the time-honoured and world-renowned institution which for two centuries and a half had pursued with untiring energy the object for which it was founded—the improvement of natural knowledge. Surely there were few things so wonderful as that society, originating in a small club of persons who met weekly in the most simple manner for the discussion of philosophical inquiries, and grown by its own force, unaided by the State, as other academies usually were, to a mighty body which extended its influence all over the globe, and the annals of which showed a long list of the very first and most illustrious of natural philosophers, from Boyle and Newton to Charles Darwin and Lord Kelvin. The most striking feature in their long history was, perhaps, the unbroken continuity between the past and the present, between the modest beginnings and the glorious onward career, a continuity that was perspicuous, not only in the constancy of their true and high scientific spirit, but also, he thought, in the outward form. The collected works of Huygens, now being published, contained about 3000 letters, and many of them were directed to or received from members of their society, the chief correspondents at the time of which he was now speaking being Moray, the first secretary, Oldenburg, and eventually their first president, Lord Brouncker. Among the subjects treated in these letters there were some very proper for illustrating the continuity of which he had spoken. For instance, Lord Brouncker devoted much of his time to pendulum experiments for the purpose of finding a universal and natural unit of length. He was careful about the material of which the pendulum should be made. It ought, he thought, to be of good silver. In these days they had seen Sir J. J. Thomson experimenting with a pendulum which consisted of much more valuable material, namely, radium, though not, of course, made entirely of radium. So in those early days they could notice a feature that seemed to him to be characteristic of British physical science, the invention of mechanical models for the purpose of illustrating natural phenomena, a method that had borne such splendid fruits in the hands of Faraday, Lord Kelvin, Maxwell, and their successors.

In responding to the toast of "The Royal Society," the newly elected president, Sir Archibald Geikie, spoke as follows:—

It is not without interest on an occasion like the present to look back for a little at the first beginnings of such an institution as the Royal Society, and to compare and contrast its present condition with that of its infancy. In the middle of the seventeenth century, amidst the first impetus given by the writings of Francis Bacon, a small company of enthusiasts for what was called the "New Philosophy," including such men as Robert Boyle, Robert Hooke, William Petty, John Evelyn, and Henry Oldenburg, met together in London, mainly for the purpose of making experiments and discussing with each other the lessons to be drawn therefrom. This select company, which some of its members knew by the name of "The Invisible College," eventually gained the sympathetic notice of Charles II. He incorporated and named them "The Royal Society," and such was his interest in their welfare that he was induced to grant them no less than three charters in the course of seven years. He is said to have suggested to them various subjects for experiment, but there is good evidence that, with his keen sense of humour, he liked sometimes to make fun of them. Pepys tells how, a few months after the society had received its first charter, the King "mightily laughed at them for spending time in weighing of ayre and doing nothing else since they sat." The Royal example was followed with less good nature by poets such as Butler, who satirised the young society; but the philosophers outlived the sarcasm. That they were in most serious earnest in their experimental inquiries was shown by their appointing and subsidising some of their number as "curators of experiments," whose duty it was to prepare experiments which were exhibited and discussed at their weekly meetings. These experimental demonstrations and the discussions arising from them, rather than the reading of set papers, were the characteristic feature of the earliest meetings of the society.

In those days the range of natural knowledge was comparatively limited, so that a fairly complete acquaintance with all its fields was not beyond the compass of any man of average intelligence and industry; but as this range widened and the boundaries of the several branches of science extended, it became in the course of years increasingly difficult to follow the original experimental arrangements for the meetings. Fully equipped laboratories had to be created outside the Royal Society, where long and intricate series of connected experiments and investigations could be carried on in the domains of physics and chemistry, and ultimately also of biology. Hence by degrees papers descriptive of these researches supplanted at the society's meetings the older practical demonstrations of the processes of experiment, and came to be, as they are now, the recognised form in which advances in science are laid before the society.

The reading of these papers, or abstracts of them, the careful consideration of them by specially appointed committees, and the ultimate publication of such of them as are approved in the Proceedings or Philosophical Transactions, form the main part of the scientific work of the Royal Society at the present time. We can point with not unjustifiable pride to our long series of published volumes as a memorable record of the advance of all branches of natural science during nearly 250 years, and of the share which the society has had in furthering this progress.

But the meetings, discussions, and publications form only a portion of the ordinary business of the Royal Society. I think it is not generally known how much additional work the society is now called upon to undertake. The confidence felt by Parliament, the Government, and the country at large in the society's capacity and judgment is shown by the multifarious tasks which have been entrusted to it, outside of what might well be regarded as its more legitimate sphere of operations. Thus it nominates a representative to the governing body of each of the great public schools, who is specially charged to watch over the interests of science in the general curriculum of instruction. It has a voice in the election of some of the scientific chairs in the two older universities. It administers the annual Parliamentary grant of 4000*l.* for the furtherance of scientific investigations. It has been entrusted with the control and supervision of the National Physical Laboratory. It takes a large share in the visitation and direction of Greenwich Observatory. It nominates nearly one-half of the Lawes trust, which has rendered such important services to the scientific development of agriculture.

Over and above these standing engagements, if one may so call them, the Royal Society is not infrequently consulted by the various public departments of the country in regard to questions wherein expert scientific knowledge

is required. In recent years these applications have had more special reference to the nature and origin of various diseases in our colonies and stations abroad, and the best means to be adopted for coping with them. As an illustration of this side of the society's activity, I may refer to our late inquiry into Malta fever—a disease which for many years so seriously disabled our naval and military establishments in the Mediterranean basin. This investigation was undertaken at the joint request of the Admiralty, War Office, and Colonial Office. Within a few months we were fortunate in discovering the source of the malady, and were able to point out the precautions to be taken in dealing with the fever. The satisfactory result has been attained of almost entirely banishing the disease from the hospitals of Malta. A more difficult and prolonged inquiry has been in progress for some years into the terrible evil of sleeping sickness. The commission sent out to Central Africa by the Royal Society soon ascertained the immediate cause of the malady, but although the investigation has been prosecuted in various directions, no certain cure or preventive has yet been found. A few weeks ago our eminent and intrepid colleague Sir David Bruce, taking with him two officers of the Army Medical Department, returned to Uganda to renew his inquiries on the spot. We have also a committee at work in London endeavouring to discover a drug that may be effectual in the treatment of trypanosome diseases. We sincerely hope that the various efforts now in vigorous operation may be ultimately successful, and thus that in wide tracts of Central Africa which have been so grievously depopulated, this fatal scourge, if not wholly exterminated, may at least be reduced alike in its area of distribution and in the seriousness of its effects. I may add that the Colonial Office recently established a national bureau for the purpose of collecting and disseminating information from all quarters regarding sleeping sickness, and that the Royal Society, at the request of that public department, has been glad to provide for the bureau such office accommodation as the limited space at Burlington House will permit.

Ever since the year 1662 the Royal Society has met on St. Andrew's Day for the purpose of electing its council and officers. This important annual function has been discharged this afternoon, with the result which is before you. The whole body of fellows must sincerely regret that our recent president, Lord Rayleigh, felt himself unable to serve the full period of his tenure of the office. We are all grateful to him for the care and attention which he constantly gave to the business, alike at the meetings of council and at those of the society, over which he presided with unfailing tact and dignity. We trust that he will return from South Africa re-invigorated for the resumption of those studies which, while placing him in the first rank of leaders in science, have reflected so much lustre on the Royal Society. The vacancy in the secretaryship has been filled by the election of Prof. Rose Bradford. Having already served for one year as foreign secretary, he has gained experience in the details of the business of the society, and he assumes his new duties with the heartiest good wishes of his brother-officers and, I am confident, also of the general body of the fellows. In our new foreign secretary, Sir William Crookes, we have a man of world-wide fame, whose election will be hailed abroad with not less approbation than it has received at home.

There was once a time when the Royal Society, so long accustomed to reign alone among the scientific institutions of the country, was disposed to look askance upon the rise of other learned societies the main object of which was the cultivation of some single department of science. Happily that time has long since passed. The most cordial relations now bind the younger offspring to their venerable mother. These special societies, which have so multiplied in our own time, have been of enormous service in advancing the progress of their several departments of inquiry. Science has grown far beyond limits that can be adequately supervised by any single organisation. Almost all the Fellows of the Royal Society belong also to one or more of these societies; but no practical inconvenience arises from any divided allegiance. While chemists, geologists, zoologists, or botanists are loyal members of their several special societies, they are happy to be included also in the ranks of the Royal Society. They are proud of its prestige, of its traditions, of the large part it has played in the history of British science, and of the high position which it holds among the academies of the world. They recognise its catholicity alike in the selection of its fellows and in the papers which it prints in its publications. They see that while other learned bodies properly concern themselves with their own special fields in the scientific domain, the Royal Society, true to the spirit of its earliest leaders, continues to welcome any worthy addition to any department of natural knowledge, not from its own fellows only, but from outside workers who are found to have something new and of real value to communicate.

In four years hence the Royal Society will complete its fifth half-century. Nevertheless, though old in years, it remains still young in energy and aspiration. With the cooperation of the other societies we look forward to a future not less distinguished and useful than our past has been.

Speeches were also made by Prof. Tilden, Dr. Head, Lord Avebury, the Italian Ambassador, and the Bishop of London.

NOTES.

THE account which we print elsewhere of the anniversary meeting and dinner of the Royal Society contains many interesting statements of work accomplished and undertaken. Of particular interest is the election of Sir Archibald Geikie as president of the society in succession to Lord Rayleigh, who is leaving England for a long visit to South Africa, and has resigned the office held by him with such distinction for the past three years. In nominating Sir Archibald Geikie to the presidency, the council complied with a desire widely expressed in the society, and his election on Monday has given satisfaction, not only to fellows of the society, but also to the wider circle of workers in many departments of intellectual activity who admire his genius both on the scientific and literary sides. As Prof. de Lapparent pointed out in an article upon Sir Archibald Geikie's work contributed to our "Scientific Worthies" series in January, 1893:—"Since nothing in the world is less common than the union of scientific insight and acuteness with a vivid appreciation of nature and a delicate feeling for style, it is not strange that Sir Archibald's fame has passed far beyond the circle of professional men." The article showed that the claims of Sir Archibald Geikie to the highest form of recognition in the scientific world are of outstanding importance. Of all British geologists he has long been acknowledged as the most distinguished, and his election to the presidential chair of the Royal Society has given universal satisfaction.

WE regret to learn that M. Albert Gaudry, foreign member of the Royal Society, died on Sunday, November 29.

WE notice with regret the announcement that Dr. E. T. Hamy, professor of anthropology at the Paris Museum of Natural History and member of the Academy of Medicine, died on November 18, in his sixty-sixth year.

THE death is announced of Dr. O. T. Mason, head curator of the department of anthropology of the U.S. National Museum.

IT is announced that the Nobel prize for physics has been awarded to Prof. M. Planck, professor of mathematical physics in the University of Berlin; and the prize for chemistry to Prof. E. Rutherford, F.R.S., Langworthy professor of physics in the University of Manchester.